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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/966,259	10/01/2001	Richard C. Rose	2000-0572	5143

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EXAMINER
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JACKSON, JAKIEDA R

ART UNIT	PAPER NUMBER
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2655

DATE MAILED: 04/06/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/966,259

Applicant(s)

ROSE ET AL.

Examiner

Jakieda R Jackson

Art Unit

2655

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 02 December 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-32 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- 4) ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date \_\_\_\_\_
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Response to Amendment***

1. In response to the Office Action mailed September 2, 2004, applicant submitted an amendment filed on December 2, 2004, in which the applicant traversed and requested reconsideration with respect to **claim 1-32**.

### ***Response to Arguments***

2. Applicants argue with regards to claim 1 that the examiner ignores the core limitation of the memory storing data related to at least one of a communication device, transducer, vocal information and acoustic environment data. However, Thrasher does teach that the nonvolatile storage stores computer readable instructions, data structures, program modules and other data for the personal computer (column 2, paragraphs 0019-0020).

Applicants also argue regarding claim 1 that the controller in Thrasher is simply introduces as a general hardware component without any reference to determining the data of at least one communication device, transducer, vocal information and acoustic environmental data. In addition, applicants argue that Thrasher does not teach recognizing speech utterances by using a compensated speech recognition model, since Thrasher does not teach compensated speech model. However, Thrasher teaches that the controller is coupled to the memory (figure 1 with column 2, paragraphs 0019-0020) determines the data of the communication device (column 2, paragraphs 0019-0020). Thrasher also teaches that the speech recognition engine (figure 2, element 103) includes N-Best alternative subpath. This allows the user's input, using

voice commands, to identify the portion of the reference path, which is incorrect. Based on these inputs, the language model (figure 2, element 110) is accessed and the information is corrected (column 3, paragraph 0038).

Applicants argue regarding claims 5, 7-8, 10, 12-13, 19, 21, 26-27 and 31-32 that since the parent claim recites several limitations not taught or suggested by Thrasher, these claims are patentable as well. However, applicants arguments are not persuasive based on the discussion above.

Applicants argue regarding claims 2-4, 6, 9, 11, 14-18, 20, 22-24, 25 and 28-30 that there is no motivation or suggestion to combine these references/teachings. In response to applicant's argument that there is no suggestion to combine the references, the examiner recognizes that obviousness can only be established by combining or modifying the teachings of the prior art to produce the claimed invention where there is some teaching, suggestion, or motivation to do so found either in the references themselves or in the knowledge generally available to one of ordinary skill in the art. See *In re Fine*, 837 F.2d 1071, 5 USPQ2d 1596 (Fed. Cir. 1988) and *In re Jones*, 958 F.2d 347, 21 USPQ2d 1941 (Fed. Cir. 1992). In this case, each claim limitation teaches from the reference the motivation to combine. The page and line number in which the information can be found also follows it.

Applicant argues regarding claims 15-17 and 29-30 that these claims are patentable because under 35 U.S.C. Section 103(c), Buhrke et al. cannot be used to preclude patenting since it is owned by AT&T Corp. (same assignee). Therefore, applicants submit that claim 5 is patentable over these references since Buhrke et al.

cannot preclude patentability of these claims. By error, it is believed that the applicants meant that claims 15, not claim 5 is patentable over these references.

Applicant's arguments, see page 8, filed December 2, 2004, with respect to the rejection(s) of claim(s) 15-17 and 29-30 under U.S.C. 103(a) have been fully considered and are persuasive. Therefore, the rejection has been withdrawn. However, upon further consideration, a new ground(s) of rejection is made in view of Chou et al.

***Claim Rejections - 35 USC § 102***

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

4. **Claims 1, 5, 7, 8, 10, 12-13, 19, 21, 26-27 and 31-32** are rejected under 35 U.S.C. 102(e) as being anticipated by Thrasher et al (U.S. Publication No. 2002/0052742), hereinafter references as Thrasher.

Regarding **claims 1, 13 and 21**, Thrasher discloses an automatic speech recognition system, controller and method, hereinafter referenced as an "ASR system", comprising:

a memory (storage devices) that stores data related a communication device (hand-held devices/communication network; column 2, paragraph 0019-0020);

a controller coupled with the memory (memory controller; figure 1) that determines the data of the communications device (column 2, paragraph 0019-0020), and then compensates at least one speech recognition model to reflect the data (language model; figure 2, element 110 with column 3, paragraph 0038); and

a speech recognizer (figure 2, element 103 with recognizer; column 3, paragraph 0035) that recognizes speech utterances by using the at least one compensated speech recognition model (recognized speech; column 3, paragraph 0038).

Regarding **claim 5**, Thrasher discloses an ASR system according wherein a personal computer (figure 1, element 20) is used provide the data of the communications device (column 2, paragraph 0023 and 0024).

Regarding **claims 7 and 26**, Thrasher discloses an ASR system wherein the data of the communications device is provided through a satellite communications system (column 2, paragraph 0022).

Regarding **claims 8 and 27**, Thrasher discloses an ASR system wherein the speech recognizer is a network server using a hidden Markov mode (column 3, paragraph 0030).

Regarding **claims 10 and 31**, Thrasher discloses an ASR system wherein the network server updates (update) the at least one speech recognition model (column 1, paragraph 0009).

Regarding **claims 12 and 32**, Thrasher discloses an ASR system wherein the communications device can be configured by an end user to select a specific speech recognition network (selected portions; column 3, paragraph 0037 with column 4, paragraph 0039-0040).

Regarding **claim 19**, Thrasher discloses an ASR system wherein the controller communicates with a memory (memory controller) that stores various acoustic environmental models (environment) and various features of a specific type of mobile device (hand-held device; column 2, paragraph 0019-0020 and column 3, paragraph 0029).

### ***Claim Rejections - 35 USC § 103***

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. **Claims 2-4, 6, 9, 11, 18, 20, 22-24, 25, 28** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Pan et al. (U.S. Patent No. 6,304,844), hereafter referenced as Pan.

Regarding **claims 2 and 22**, Thrasher discloses an ASR system, but lacks wherein the transducer data includes a distortion value related to a transducer of a mobile communications device.

Pan discloses an ASR method wherein the transducer data includes a distortion value (distortion scores) related to a transducer of a mobile communications device (column 6, lines 25-57), to obtain the greatest similarity of a word.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the transducer data includes a distortion value related to a transducer of a mobile communications device as in Pan, to obtain the difference between two measurements of a signal, which gives the greatest similarity of a word (column 6, lines 57-59 with lines 37-47).

Regarding **claims 3 and 23**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data includes a background noise value that corresponds to an operating environment of a mobile communications device.

Pan discloses an ASR system wherein the acoustic environmental data includes a background noise (background noise) value that corresponds to an operating environment of a mobile communications device (cell phones; column 10, lines 13-17), to collect models from different communication devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the acoustic environmental data includes a background noise value that corresponds to an operating environment of a mobile communications device as in Pan, to have a variety



of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claim 4**, Thrasher discloses an ASR system, but lacks wherein the vocal information includes a distortion value related to an end user associated with a mobile communications device.

Pan discloses an ASR system wherein the vocal information includes a distortion value (figure 4, element 402 with figures 6-8 and column 6, lines 51-57) related to an end user associated with a mobile communications device (column 1, lines 7-9), to obtain the greatest similarity of a word.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that the vocal information includes a distortion value related to an end user associated with a mobile communications device as in Pan, to obtain the difference between two measurements of a signal, for the greatest similarity of a word (column 6, lines 57-59 with lines 37-47).

Regarding **claims 6 and 25**, Thrasher discloses an ASR system, but lacks wherein a personal digital assistant is used to provide the data of the at least one communications device, transducer, vocal information and acoustic environmental data.

Pan discloses an ASR system wherein a personal digital assistant is used to provide the data of the at least one communications device (column 12, lines 48-51), to perform specific tasks.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such that wherein a personal digital assistant is used to provide the data of the at least one communications device, transducer, vocal information and acoustic environmental data as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claims 9 and 28**, Thrasher discloses an ASR system, but lacks wherein the controller is a network server that includes a pronunciation circuit, an environment-transducer-speaker circuit and a feature space circuit.

Pan discloses an ASR system wherein the controller is a network server that includes a pronunciation circuit (pronunciation database; figure 1, element 103), an environment-transducer-speaker circuit (figure 1, element 101 with column 10, lines 12-17) and a feature space circuit (feature extraction; column 3, lines 60-65), to achieve the optimum accuracy of the recognized speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the controller is a network server that includes a pronunciation circuit, an environment-transducer-speaker circuit and a feature space circuit as in Pan, to rapidly process a greater variety of words, so that voice information transfer is feasible in any communication device (column 2, lines 54-63).

Regarding **claim 11**, Thrasher discloses an ASR system, but lacks wherein the memory further stores personal account and a probability value that represents a probability of the end user being in a particular background environment.

Pan discloses an ASR system wherein the memory further stores personal account information that includes administrative information relating to an end user (individual user's pronunciation; column 4, lines 1-4), and a probability value that represents a probability of the end user being in a particular background environment (beginning and end points; column 10, lines 9-27), to achieve optimum accuracy of the recognized speech.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system such the memory stores personal account information and a probability value that represents a probability of the end user being in a particular background environment as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

Regarding **claim 18**, Thrasher discloses an ASR system, but lacks wherein the vocal information represents a variability that exists in vocal tract shapes among speakers of a group.

Pan discloses an ASR system wherein the vocal information represents a variability that exists in vocal tract shapes among speakers of a group (vocal tract characteristics; column 5, lines 5-8), to allow personalized pronunciations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system the vocal information represents a variability that exists in vocal tract shapes among speakers of a group as in Pan, thereby allowing personalized pronunciations to be achieves with minimal processing and storage (column 5, lines 5-8).

Regarding **claim 20**, Thrasher discloses an ASR system, but lacks wherein a third section stores personal account information for each end user.

Pan discloses an ASR system wherein a third section stores personal account information for each end user (personalized pronunciation with storage; column 5, lines 5-8), to allow personalized pronunciations.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein a third section stores personal account information for each end user as in Pan, thereby allowing personalized pronunciations to be achieves with minimal processing and storage (column 5, lines 5-8).

Regarding **claim 24**, Thrasher discloses an ASR system, but lacks wherein the data of the at least one of a communications device, transducer, vocal information and acoustic environmental data is received from a cellular telephone.

Pan discloses an ASR system wherein the data of the communications device is received from a cellular telephone (cell phones; column 10, line 14 with column 2, line 61), to collect models from different communication devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the data of the at least one of a communications device, transducer, vocal information and acoustic environmental data is received from a cellular telephone as in Pan, to have a variety of mobile communication devices which can be included to detect noise in different environments (column 10, lines 13-17 with column 2, lines 60-63).

7. **Claim 14** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Eagleson et al. (U.S. Patent No. 6,720,888), hereinafter references as Eagleson.

Regarding **claim 14**, Thrasher discloses an ASR system, but lacks wherein the controller identifies a mobile device by a radio frequency identification tag.

Eagleson discloses the controller identifies a mobile device by a radio frequency identification tag (column 1, lines 19-21 with column 14, lines 38-41), to track mobile devices.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the controller identifies a mobile device by a radio frequency identification tag as in Eagleson, to accurately determine the location of mobile devices (column 29, lines 1-4)

8. **Claims 15 and 16** are rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view Byers (U.S. Patent No. 6,219,645).

Regarding **claim 15**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data is determined using at least one microphone in an end user's environment.

Byers discloses an ASR system wherein the acoustic environmental data (sound) is determined using at least one microphone in an end user's environment (column 14, lines 41-58 with column 13, lines 16-30), to detect sound pressure.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the acoustic environmental data is determined using at least one microphone in an end user's environment as in Byers, to improve the signal to noise ratio, to provide the highest quality audio before passing it on to the automatic speech recognition algorithm (column 2, lines 19-22).

Regarding **claim 16**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data is determined using a plurality of microphones that are selectively initiated as an end user walks in between the plurality of microphones.

Byers discloses an ASR system wherein the acoustic environmental data is determined using a plurality of microphones (figure 1, elements 70, 5, 80, 85) that are selectively initiated as an end user walks in between the plurality of microphones

(targets for users commands; column 10, lines 49-54), to pick up signals in different directions.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's invention wherein the acoustic environmental data is determined using a plurality of microphones that are selectively initiated as an end user walks in between the plurality of microphones as in Byers, to improve the signal to noise ratio by choosing which microphone(s) are providing the highest quality audio.

9. **Claim 17** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view Chou et al. (USPN 5,778,336), hereinafter referenced as Chou.

Regarding **claim 17**, Thrasher discloses an ASR system, but lacks wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model.

Chou discloses a speech recognition system wherein the transducer data is a distortion value (environmental distortion) based on a difference between an actual transducer in the mobile device (wireless channel) and a response characteristic of a transducer (original speech channels) used to train the speech recognition model (distortion is modeled; column 1, lines 13-32 with column 6, lines 48-60 and column 9, lines 10-22), improve intelligibility of the signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model as in Chou, to minimize the adverse effects of acoustic mismatch (column 1, lines 13-32).

10. **Claim 29** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Pan et al. as applied to claim 22 above, and further in view of Byers.

Regarding **claim 29**, Thrasher discloses an ASR system, but lacks wherein the acoustic environmental data is determined using at least one microphone in an end user's environment.

Byers discloses an ASR system wherein the acoustic environmental data (sound) is determined using at least one microphone in an end user's environment (column 14, lines 41-58 with column 13, lines 16-30), to detect sound pressure.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the acoustic environmental data is determined using at least one microphone in an end user's environment as in Byers, to improve the signal to noise ratio, to provide the highest quality audio before passing it on to the automatic speech recognition algorithm (column 2, lines 19-22).



11. **Claim 30** is rejected under 35 U.S.C. 103(a) as being unpatentable over Thrasher in view of Pan et al. as applied to claim 22 above, and further in view of Chou.

Regarding **claim 30**, Thrasher discloses an ASR system, but lacks wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model.

Chou discloses a speech recognition system wherein the transducer data is a distortion value (environmental distortion) based on a difference between an actual transducer in the mobile device (wireless channel) and a response characteristic of a transducer (original speech channels) used to train the speech recognition model (distortion is modeled; column 1, lines 13-32 with column 9, lines 10-22), improve intelligibility of the signal.

Therefore, it would have been obvious to one of ordinary skill in the art at the time the invention was made to modify Thrasher's system wherein the transducer data is a distortion value based on a difference between an actual transducer in the mobile device and a response characteristic of a transducer used to train the speech recognition model as in Chou, to minimize the adverse effects of acoustic mismatch (column 1, lines 13-32).

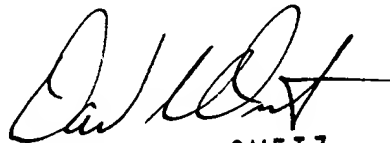
**Conclusion**

12. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Jakieda R Jackson whose telephone number is 571.272.7619. The examiner can normally be reached on Monday through Friday from 7:30 a.m. to 5:00p.m.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, David Ometz can be reached on 571.272.7593. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

April 1, 2005

  
DAVID L. OMETZ  
PRIMARY EXAMINER